Notebook Series -- Pocket Notebooks
Notebook, PN-14-12-05

The dated entries in this pocket notebook cover the period December 1914-April 1915. The book was used by Edison to record ideas about business matters, experiments to be tried, and other tasks to be performed. Some of the items have been crossed out. Included are technical notes pertaining to batteries, disc records, and chemicals. The business-related entries include notes about disc record demonstrators and sales, production costs per record, and types of music that should be recorded. There are numerous comments about rivals Columbia and Victor, including remarks about their sales, sales techniques, and types of music available on their records. Also included are suggestions regarding a new violinist, new phonograph horns for use in recording, and the "new studio." In addition, there are costs estimates for the new chemical plants and notes about projected phenol and benzol sales. In the middle of the book are three pages of notes, probably in the hand of Edison's assistant William H. Meadowcroft, entitled "Manufacture of Carbolic Acid" and "Calculation of Wages for Labor Manufacturing Phenol."

Among the numerous Edison employees mentioned in the book are H. H. Meno Kammerhoff, supervisor of operations at Edison's new chemical plants in Silver Lake, New Jersey; chemist Victor L. King; engineer William H. Mason, who supervised the installation of Edison's benzol plants at Johnstown, Pennsylvania, and Woodward, Alabama; John V. Miller, Edison's brother-in-law and manager of the Edison Chemical Works at Silver Lake; William W. Dinwiddie and Sherwood T. (Sam) Moore, two of Edison's principal assistants in the development of disc records; John J. Riley, manager of the Demonstration Dept. of the Recording Division; and construction engineer Seaton M. Scott. The inside back cover is inscribed "Liebold." The pages are unnumbered. Approximately 150 pages have been used.

Dec 5 1914

Try A4 Cells with some Table Organic substance in solution to make the $Ni(OH)_2$ very slightly soluble. Little Co Salt.
It may be necessary to keep small Cells do better than 4 f. more Organic per tube –

Might precipitate $Ni(OH)_2$ and $Co(OH)_2$ with Excess Soda or KH Organic matter in solution to make it slightly sol. this would make $Ni(OH)_2$ less soluble

~~Cambria steel Co 372. Bryce P~~
~~ovens – don't use gas for Illuminating~~

Lackawanna Steel Co 252
ovens don't use gas, can
get out at full Cap 1200
gal Benzol daily, Cost,
7½ Cents gal

Michigan Alkali Co (Wyandotte Mich)
30 ovens use for fuel

Dominion Iron & Steel Co
500 ovens use for fuel

Nova Scotia Steel & Coal Co
120 ovens use for fuel
Sharon Coke Co South Sharon Pa
212 ovens gas for fuel

Steel Co 280 } use for fuel
Carnegie St Co 240 }
Pittsburgh Gas & Coke Co Monongahela Pa
fuel & illuminating

Penna Steel Co
120 ovens fuel

New Haven Gas Co. distill own coal

Cornellon Coke & Gas Co –

Tenn Iron & Coal Co. fuel,
120 ovens

Central Iron & Co South
40 ovens for fuel

Retort Coke Oven Co Cleveland
105 ovens

National Tube Co
120 ovens use for fuel

Pentoch Gas Co residual has Bly

Geneva Steel Co near Steel
with Bessemer decide
about Chicago.

Tested ovens Milwaukee
Bally for Illinois.

Minneapolis & St
Louis coke on Range Superior

Offered Lackawanna Steel Co
Take 500 gal. CP Benzol
2 yrs at 20 c gal CP
using 72% less cost of distillation
1½ c gal then next 2 yrs
1st Cost at 24c after that
1st Cost not worked

Dez of Alcoholic Kott with CC
wipe out Chalker marks
on a Condensate receiver

Dez a Condensate Meter in
Bldg Their Condensate or
Steam in Benzol
So leave a block on exp for
Dry or gravity Ins - Sundrie

Take Wax discussion
+ a ball somewhere as
Knife mounted on long
spring so not hurt hills
+ no use and Chalker
marks etc then Grafelage
Run slow, No weight to
6 weeks

2200 lbs daily of Phenol
Requires for month
80000 lbs Benzol
400 000 lbs H_2SO_4
225 000 lbs Limestone
42 000 lbs Soda Ash
115 000 lbs Caustic Na

as made Dec 5 1914

Nelson Piano Co Philda
Rolls Steinway —
Vandergrift & German in
change — Very favorable
Riley favors

Cable Wagoner if he
can buy tubing 90 per
Thengall & price tub
NLP.

Listen to latest Wolgemuth
Vic records.

Get 3 Mozella phonographs
some records & off
Leases Lombard & Exch
Orchestra

Follow up Reports & other
returned Gallons —

of 5 gros 6215 Cup.

Moore try & segment on
a very short schedule

How about old & dones &
returned Gallons. What
was done with them
If original set in send
several samples over
What is being done with them

Sell Wallquist & Lewis
25 records Cy
Selling scheme

Get on Blue Jumetta good

Look up works on Vibrating

Window Displays - Columbia
Shows cartoon 24 X 16 -

Get hand of the Skyblue cyanide
by Cardinal its terrible ...
lower keg

Is fumigated tied up -

Get dealer Magnard Falls
Reels, its all Victor

Nov 18 - 148 days supply
Para -

Yours Eyes - 70111 Victor
Geo MacFarlane 13 in one
pretty good -

Displacement test

Benzolsulfonic acid	250 cc
Dry Caustic lime	150 grams
Making water	500 cc

8" Column of lime mix 2" Lea
Water Column above mix 12"
Theoretical amount of water
should be 500 cc
got out 700 cc nothing left in
lime - but trace -
Time 8½ hours -
Suggest 6" thick lime mixing
tank 4 10" in water -

Hayes put out Delivery Mors
Opera; possibly a special -

Get up a Volume interpretation
Curve of some well known song

Enter on Requisition book
400 E w Cobalt instead of
7½ & 401 E w/ Cu/272

402 w all Cadmium from
Hydraulic Cyl H, for Cold
tests –

Riley – Akron Ohio work
in conjunction with Exclusive
dealer. put on map

Also Evansville if we
have Exclusive

Have we a dealer
Exclusive in Trenton

We need an auto device
to put in White on Edge
of records.

Don't set that on Superkinetic
till I engrave.

Have Sandor hear
Malpiquinos acc. if he has
no female trio in good
voice.
Try get trial of new German
tenor Johann Sembrich
at Met Op. no one also Botta

Have fred OK try Zinc engraving
Ni tubes for sheet
Wings & Loops - Starlex bodies
if OK try Cold Test on it
by little keg — KEG

Try Cold test small coil
30% 2 Li

also Ni tube Gudmann
sheet, Cold test.

Fred OK sheet Mg & Mg Ray
use Cobalt alloy Ni
with Tantalum on Surf.

10000 desc
80% OK

12500 blanks

Blanks & Spacers	725 00
15 White wax	18 45
15 Marlex Moulds	18 15
30 2nd Marlex	36 30
80 wkg Moulds	96 80
5 Marlex Labels	23 75
80 Sub M "	22 40
Grumes supplies	50 00
Payroll	1437 00
Genl Exp Disc Chgs	516 00
Patent	250 00
40% Genl Exp —	1277 00
20% Selling	894 00
	5364 00

53.6¢ Record

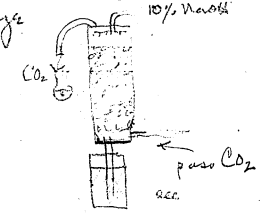
Mallory = What are
you getting out of
W Va Limestone Mill

2 Xylo in 3rds -

Must Wash out
low grade 90%
Benzol with H_2SO_4
& then NaOH
& Water & Glycerin etc
before distilling -
See Kronquist & Humphrey
German Benzol works -
Must get ready right off

Distill Primary gas 5 gal
Sample - randy & Williams does
then 50% Benzol & Toluene
Tar distillers don't buy it
to hard to keep from Hydrocarbon
mostly Glycerin - Think H_2SO_4
& NaOH will help -
Considerable Cyclopentadiene
Some Cresols
Can Chlorinate Hydrac by
passing Chlorine & distilling
off Benzine Lunge Vol II
p 49 Speaks of picric
used process for removing
Hydrocarbon from
Burlock gas Dignud -
Y Think Picric Combines
with the Hydrocarbons

Lott. opt 6" pipe
3 ft high, fill with
1/2 Limestone all same
10% Nacl
O_2



Neo - dry Sugar fumes
in weight of H_2SO_4
Benzol or Exact
Chemical, add 10%,
Extra Benzol - take long
time heat to drive off
Benzol - see if all
Polymer Sulfonate

The Devils Trill
played by Fritz Kegler
without Leadnuque

Neo violent
. Pablo Casals -
Kegler says he is wonderful
Sun San Ta -

Learning where is
the Bay of Pig put we
have Learning
from Bay of Pig

Countable Curled
Horn Centuries
to Equal big Horn

See where are Barrett
Creaghe Cookson is
selling it also Bay
Way MP —

Schniewind Coke Oven
Co Indianapolis Ind
Byproduct oven

Methylating of Benzol
to Toluol. passing
Methylchloride Benz
Benzol in presence
of AlCl
Aniline 1 methyl 2nd methyl
2 ms cr also on up —

get Jaques Lalles B Mfg
Co about the 20 mod
gall & have hammer
border Hammerhaff
ship it —

75 HP Motor for
air Comp died
& tell Charles

Ventilation of
plate flowing room
& painting

20 wide 12 ft high
30 long Vault for
coke [illegible]

Linda per pale
Chilling out
Benzol — Coal plant

Rig up agitator &
Clean our 90% Benzol
with Sulphuric. Think
it will make OK product
then —

one bell 40 ft hour
Bell washer

17 Records per
gal Pure Benzol.
basis — 5 lbs phenol
gal — 3.4 records
1 lb phenol —

17
500 Records

When new studies done

Play Espoir – Melodic
beautiful, badd done
by Crooklets –
Who is Composer –

Nitrous acid converts Aniline
into phenol –
" test use Aniline Hydrochloride
& Silver Nitrite " & wonder of
Na Nitrite made do –

Diazobenzene dissolved in
dilute Sulf acid & the
theoretical amount of K Nitrate
gradually added in aqueous
solution. The product is
then boiled with water
when phenol is formed
$C_6H_5N_2SO_4H + H_2O = C_6H_5OH + N_2 + SO_4H_2$

Patent new Electric
with worm running
gear & regulator

[25]

Phone McIlvane Wolf at a temp. of his gas entering gas holder

Phone Bay way if they can furnish a lar air 5% not distilling below 390° F. & 90% distilling between 390 & 572 F. also Gravity & price & if he could send 5 gal sample not more than 7% Naphthalene or 1% of tender

Fireman who left 70 x 30 in 4 days get his money

Sulphonate some of absorbing oil & make nat'l Carbolic for of Condensers

Morrahan –

Why didn't you man work on jent 1 on grinding Mixed holders

We are in the possible need of them, I guess the man is not in want of work

Why not give somebody else a job that needs work

Why don't you get the face plate needed that was ordered a week ago –

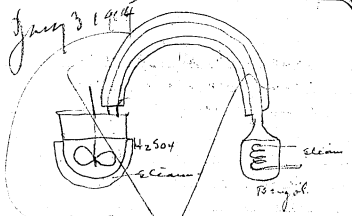
Phone Mr Thomson What temperature has gas when it enters the gas holder

Think can Consign J V Miller Sulphate Soda to get Soda for Glucol Well gypsum to Cement works

Can Benzene Sulfonic Ca be chilled out of the Mix with H_2SO_4 —

Layout of offices to be submitted to me —

Spring 3 1914



Superheat Benzol vapor

Benzol vapor could be carried long way — condensing would be very rapid

Burnside + Anderson Glasgow Scotland Brit pat 23605 Oct 16 1913 Use steam to settle dust by electrifying the nozzle which is fine jet the microscopic particles attract the dust + coalesce —

Wash oil Soda, H_2SO_4	1.1 cents
Steam	1.1
Electric power Lighting etc	0.5
Wages	0.4
Overhead	0.2
Amortizement 3 yrs 30000 -	3.7
Redistill to 90%	1.0
Redistill to pure	1.5
Cost,	9.5

15 Cents basis for oil shipped

Nets to Coke Co	5.5 cents gal.
& pays in addition loss of Calorific Value,	1 cent gal.
Total price paid	16 cents gal.

~~Our normal business~~ & gal. 23.C. cost 16 + fit selling exp. interest + overhead etc. say 1.5
& per ft 5.5 gal,

Used 200 cc H_2SO_4 - or 350 grm 100%,

Used 600 cc Benzol,

Found 215 grm free H_2SO_4 - 100%
83% strong 62 Be

5 Hours at BP of Benzol

We now use 110 litres Benzol
175 " H_2SO_4 100%

This is 1 part Sulfonate to 1.85 parts free H_2SO_4 100%

Our 5 Hour Expt as above gives 1 part Sulfonate to 1.6 parts free H_2SO_4 100%.

an improvement,

fine screen for oil
Keep Exceptor out
so as not to Choke
holes or oil distributor

How many 75's on hand
today? —

Dunwoodie Keep on Chilling
wax Expts — Impossible,

A harp sounds sweet
because the strings have
no stop like a piano
If we put a dash pot or
stopping device on the
damper or piano to
damper slow we would
improve sweetness

Nobody Celluloid Co
Slowness

See if we get our money
back on Drums & see if
we return all drums
promptly —

go down see the little
shop we rented near
works —

How about Salvage of
Reds tool room tools
dittos Stock Room —

Get last runs of all
My Nos Not Cells. -

Moore bet Cox Sagas
wont have powder
blanks running
Monday

Linseed 100 lbs
35 Zinc
Ground for floors
Cement, see who
Can supply it,

Get proportion of sales
in Selected big Cities
to Total sales — USA

The highest pressure on 7z
is best to V at High rate
also when 7z gets denser
to Capacity by Shock
goes to pressure must have
Channels — film of
Collodion Silk floss like
or fibrous powder which
does as KOH. Even a powder
might do — Work it up
Acetyledone & decompose out
by Solvent after iron run
& Consolidated —

All reports of Repair men
Come to me = I have a
Clerk to tabulate —

385 to 392 — get Cold tests
unpublished

Do not Consider Ground
Sprinkler people they
die in an Advertisement.

Learning - Only Company
wrong - None in old
old pis -

Hulsh you should
discharge Cell so that
it will give the proper
Cap at hour + X time
then you may have increase
the size —

Want runs 368E
27th run 1480 - its about time
soaked 24 hours Cons Li OH
then put in 21 KOH only no Li
+ put right on charge -

also 370E no nickel plating

also 357 looks good 82% inferior

Trade abuses 2 cents off cash
Take back any old bags
6 C Extra Bin storage
Planned Contracts to
dealers over year
Others want 30 days —

7000 new Texas
6000 – Ambrosia 30

Monday Labor board
28 females #150
~~[illegible]~~

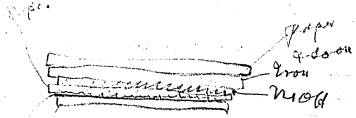
55 males wanted 19 females

Run tests on Cobalt in
place 7a + see how low
Can go Cold,

See Miller about Zapley
Cobalt get high capacity

Walcott left
Bonbright & Co
Bankers Ny

Sargeant, Orange
Nickel Lackawanna
Steel Dorado
Clarke weight heavy
man. Sargents
Sesler



Cobalt by H.

406E	screened	Iron 30 mesh	no Hg
407E	"	"	4% Hg
408	"		10% Hg
409	"	100 "	no Hg
410	"	100 "	4% Hg
411	"	100 "	10% Hg
412	"	180 "	no Hg
413	"	180 "	4% Hg
414		180 "	10% Hg

Requires 300 lbs CO_2 to liberate 500 lbs phenol from Soda Combination

for 10 000 lbs requires 6000 lbs CO_2

say $2\frac{1}{2}$ tons Coal 3 units

44 lbs CO_2 neutralizes 232 lbs Na phenolate -

44 lbs CO_2 neutralizes 80 lbs Caustic Soda

Must be wrong

415 E #2208 B1 Reduced Co at 1100°
Ox made from $CoSO_4$ Screened 30M no Hg

417 E #2208 B2 Reduced 1100°
E Oxide $CoSO_4$ 30 mesh 4% Hg added

419 E 2208 D1 Reduced 900°
Oxide made from $CoSO_4$ 30 mesh no Hg

420 2208 D2 Reduced 900°
Ox made from $CoSO_4$ 30 mesh 5% Hg

421 #2211 A self ground 30 mesh
No Hg

422 2211 B " 4% Hg

423 2211 C - self heated 30 mesh
10% Hg

Profitable - Nitrobenzoic
Anthraquinone Oil - Acetaldehyde
Benzoic acid, Salicylic acid
Picric acid - Diphenylamine

get number
Cobalt by H. (JVM 2212 E)
Reduced 1100 deg
Thru 30 mesh 5% Hg -
on Tablecloth room

How would it do to send letter
to all of the good men once
we have to go into phone
by E Shop -

424 E is JVM
(2212 E) Cobalt
at 1100 deg Screened
Thru 30 mesh 5% Hg

Manufacture of Carbolic Acid

(1.) Consumption of raw material;

Material:	One ℔ of Phenol needs:		
B. Benzol - 40° per gallon.	1.42 ℔	=	7.6219 cents
Sulph. Acid 98% 2.85# per ℔	7.19 ℔	=	6.1115 "
Limestone, 0.245 ch. per ℔	4.00 ℔	=	0.9800 "
Soda Ash, 1 cent per ℔	0.733 ℔	=	0.7330 "
Caust. Soda, 2 ch. per ℔	2.000 ℔	=	4.000 "
Total material per ℔ of Phenol		=	19.4446 cents

(2) Consumption of Coal, fuel, oil, water;

One ℔ of Phenol needs:			
Coal for evaporating, 0.185# per ℔	5.5 ℔	=	1.0175 cents
" " heating, etc. " " "	2.7 ℔	=	0.5000 "
Fuel oil, 0.445 cents " "	1.348 ℔	=	0.6000 "
Water, 90 cents per 1000 cub. ft.	4.26 cu. ft.		0.3830 "
Coal &c per ℔ of Phenol			2.5005 "

Total cost of one ℔ of Phenol.

	at 2200 ℔ per day.	at 4000 ℔ per day
1 - Raw material	19.4464 cents	19.4464 cents
2. Coal, fuel, oil, water	2.5005 "	2.5005 "
3 Wages	4.8100 "	3.4505 "
Total	26.7569 "	25.3974 "

Jany 13, 1915

Calculation of wages for Labor manufacturing Phenol

(1) For 2200 ℔ per day:

Operation	Men Day	Men Night	Cents per hour	Work hours day and night	Total hours	Total wages for 24 hours
Sulphonating Benzol	1	1	20	23	23	$ 4.60
Liming	1	1	20	23	23	4.60
Filter press	3	3	20	23	69	13.80
Decomposition	1	1	20	23	23	4.60
Concentrating	6	6	20	23	138	27.60
Fusing	2	2	20	23	46	9.20
Neutralizing	1	1	20	23	23	4.60
"	1	1	24	23	23	5.52
Distilling Phenol	1	1	20	23	23	4.60
Transporting	2	2	20	23	46	9.20
						$ 88.32

(2) For 4000 ℔ per day - Same as above, plus:

Filter Press	1	1	20	23	23	$ 4.60
Concentrating	4	4	20	23	92	18.40
Transporting	2	2	20	23	46	9.20
						$ 32.20

(1) Wages for 2200 ℔. Phenol = $88.32, or 4.014 cents per ℔

(2) " " 4000 ℔ " = $120.52, or 3.013 " " "

Jany 13, 1915

Calculation of wages for manufacturing Phenol

Miscellaneous

Operation	Men Day	Men Night	Cents per hour	Man hours Day & night	Total hours	Total wages 24 hours
Boiler plant	1	1	25	24	24	$ 6.00
Repair shop	1		35	10	10	3.50
Inspection	1		40	10	10	4.00
Foreman	1		40	10	10	4.00
						$ 17.50

These expenses to be same whether manufacturing 2200 lbs or 4000 lbs per day.

0.796 cents per lb of Phenol at 2200 lbs per day

0.4375 " " " " " 4000 " " "

Losses most in filter presses

Jany 13. 1915

" 26th 1915 Improvement

100 lbs Benzol, 252 lbs H_2SO_4 98%

1 lb Phenol now goes for nitrates

Benzol 40c gal	1.3 lbs	6.929 Cents
H_2SO_4 at 85c lb	5.026 lbs	4.272
Limestone 0.245c lb	2.97 "	0.727
NaCl 1 cent lb	0.73	0.730
Caustic soda 2c lb	1.750	3.500
1.3 lbs Benzol to 1 lb phenol		16.161 Cents

2 ~~many~~ top plate jigs —

J R Thompson Riley Mg Co Alexandria

Deems Bright —

John - Dewdrop 6 mm

Jiff 12 "

Wedel 18 "

Try platinum for Carbon

Calumet mfg ~~Chemical~~

Cheapkerosene Etc

just below Carbon

decomposition point +

see if get Benzol —

also mix of Methyl Alc

~~Phenol~~ + Benzol

also Benzol + Methyl Alc

[illegible] al made by action of Sodium on Bromobenzene + Methyl Iodide mixed in Ethereal Solution

Perhaps Coates Cell using Na Cl gives Hg Na amalgam will do this
Br Na Br + Na I Can be regenerated by Sulphuric —

Nikiforow German Pat 143549

Heat Crude Pet oil to distill in horizontal retorts 1st at 500 cent then under increased pressure of 1000 Cent — H2 gets.
12% of the crude oil taken as obtained as Benzene Toluol
1% Naphthalene
2 to 3% Naphthalene
Has patent Only derivatives how be separated

The results not on the forming — Has taken out patents in all Countries

German Pat 133761 of Schwalbe
Purifies Benzol from Sulphur Compounds CS, Thiophen Etc Uses Uses moist Ammonia under ordinary or Hg increased pressures
Only drops from which Collect underthe Benzol The washed Benzol is perfectly free of Sulphur compounds

Boiling Benzol treated with Mercuric acetate another use Sulphur Chloride both taken out Thiophen

Ask Kammerhoff of
[illegible] accuracy
of weighed Phenol
Checks up with
his Bergal Na 4 H2 SO4

Bergman - about
Canadian [illegible] take
paper -

Want to see pay roll -
& expense sheet Railways
Nimmo & Bolan 10 4 Sd.

Good Day & May will
take 8.654 tons 2600 lb
per 1044 to 1.104
1044 lb Carbolic

Map Silver Lake property
position bldg. & brush
Miller not the [illegible]
this summer

Kammerhoff daily
reports Phenol -
also of his check
the Bergal by the
Phenol actually
weighed

Mason get photos
from time to time
Bergal plant

(51)

Diphcy ~~same~~ found out
how to make it —

Organize seperate dept
Entirely including
washing & reports &
all for repairs records

425E JVM # 2226A
Co by H sulph reduced at
900° Ox made from CoSO4
screen 30 mesh 5% HgO

426E ditto no Hg

427E JVM # 2208 C1
Co by H. Reduced at 1000
oxide from CoSO4 screen 30 m
no Hg

428 JVM 2208 C 2
Same as 427 but 5% Hg

429 JVM 2208 A2
Ox from CoSO4 reduced at
1200° Ox screened 30 mesh
5% Hg —

430 - JVM 2208 A1
Same as 429 but no HgO

If after phenolis freed by CO_2 our mix is limed, it is probable that when it is concentrated. We can add a large quantity of fresh Caustic the Na Sulphite will be salted out process should be done at 180 Cent
Eng pat 14987 Aug 4 1894
Solvay Co

Find out if Reels of Ring Concern are always used before goods —

Viscose Cotton to absorb Carbon Bisulphide from Bengal —

Holegrzber 1914 French Pat. 460 827
Oxides Ni Co Cu deposited on pumice stone by surface - heat upon vapor of hydrocarbon gives charge used Bengal
J. 1914 pag 117 -

Riley Pat[2] man to Palm Beach Reg Rec + 25 Extra Miami - Bradenton + Coast Hotels etc —

Talking points, only not can dance to so keeps perfect time? With Attachments Every Person record can be played not to walk alone
Actor Singers no matter how celebrated not respons? of Voice not good

(55)

Riley - Cant up get up scheme to know if any material goes Sales, by recording Transmission Card on which Salesman name in written & remark Geared has been to material, Trans hum right on wards to that effect

How about C Kenny, your men by our inspector see how they test,

Rammelhoff & he Checks Phenolphthalein with acid & Benzol used
Rammelhoff has no Benzol tanks in

Can Carbonizers up to 20 Tw at 123 ts not Completely Carbonize on 92 ts Carbonized - Lungs. & Rat p 801

Para on hand 10th
Tolay 650 lbs on hand

See if Fused phenolphthalein handle to still & add sulphur, + distill off phenol. Expert with Mr Sulphinder

Wilson answers no letters from Jany 30 till 11th said Trad not unsworn letters

Try Hypochlorite on Benzenesulfonic of Calcium - may make phenol

British Pat 17277 July 28 1913 J Holcgreber

Benzol is obtained by passing Vapors of Petroleum or its distillation together with Hydrogen Through a tube Containing Catalytic materials heat to 180-300 Cent. C_2H_2 1st formed then polymerized to Benzol. Suitable Catalysts are Fe Cu Zn alf Ni Co Ag or Pt or mixtures thereof -

Binks

Guttmans Mfg of Explosives

also Kedesdey's "Sprengstoffe"

3 gals Reg Var add

add 1% ~~of Resin~~ of NaOH.

to the resin. Drop with

1/4% ~~drop 3%~~

Sell cal 0 Common S. Cos

Monobenzenesulfonic acid

After sulfonation, ~~add water~~ put acid drop by drop or constantly stirring drop by drop into Cold Concentrated Solution of Salt put vessel so cooled by water while pouring in ~~steel~~ acid. After some time & more quickly by rubbing walls of Beaker with sharp edge glass rod the Sodium Salt of Benzenesulfonic acid separates out in the form of leaflets with greasy luster. On long standing fine quantity increases so much that Beaker can be inverted – if separation of Crystals be long delayed take few cc of it, run ice water on outside test tube & rub inside with glass rod it will form Crystals & these are put in the big batch. This hastens the Crystallization

It may require several hours standing before all is Crystallized out

The pasty mass of Crystals are filtered & firmly pressed down & washed with a little saturated salt solution

It is dried by pressing in bags & pressed by heavy pressure

It is dried pulverized & dried at 110 C

If want it pure dissolve Hot Absolute Alc adhering Salt don't dissolve

Trinitrotoluene,
Nitrated in stages
Toluol should be very pure
1st to convert to crude Mono salt
1 part Toluol with 3 parts by
weight of mixed acids (2 parts
Nitric Spec. g 1.495 to 3 parts
Sul acid 1.84.

The mixed monoderivatives are
then nitrated to Dinitro by
action of twice its weight of
the same mixture of acids &
finally the product is treated
with still stronger acids

A better method according to
Hausserman is to slowly run

with constant stirring 2½ parts
by weight of the mixed acids
1 pt Nitric 2 pts Sulfuric of
strength previously stated
into one part of Paranitrotoluene
heated to about 60°
The mix is heated for ½ hour at
80° & then allowed to cool
The Mix of Dinitro (crystal)
is then dissolved by gentle
heat into 4 times its weight
of Sulphuric of same strength
& then mixed with 1½ times
its weight of Nitric of same
strength Kept cool

The mixture is then heated at
90°—95° with stirring for
4 or 5 hours. After cooling
the crude trinitro is separated

from the acid & washed first with hot water, then with very dilute soda solution & allowed to solidify

In quantities obtained according to purity of materials & channels of information, one has MP 72-74 the other 77-79 - for military purposes a 3rd quality MP 80.5 to 81.5 consisting almost entirely of the symmetrical isomeride is obtained by Crystallization from alcohol, Light Petroleum or Toluol.

The Crystal are free from Sulphur by Centrifuging & heated in inclined Cylinders heated by a hot water jacket

Crystal from Alcohol sulphur yellow Crystal from Petro Taking Buff Color, darkens by light

When pure no odor practically insol in Water cold

Application of flame burns with smoky flame, Cannot be exploded by flame & only quite locally by percussion as much as 1000 Kilo have burned away quietly in a Conflagration & a bullet from rifle can be fired thru a solid mass without causing Explosion It is quite safe to handle & is stable under varying atmospheric Conditions It dont combine with Metals & generally

has no acid properties
its dust or vapor are not
poisonous or injurious to those
working with it,

Its melted & poured in shells
may be pressed to 3000 atmos
in a press

~~Have sash in Lab~~
~~& facing S of storage~~
~~Building also in~~
~~4 1 story bldgs at Lab~~

1 = Make up ~~Daylight~~ rocker & boxes for ~~pouch~~ screw Mac Dept,

2 = Find out where ~~Angel~~ patent is

3 = John ~~Old~~ ~~Lift~~ Spreader Weight & feed lever to do away with reversing & lowering horn, applied to new machine -

4 = Try Calls in The 200 cc mixed acids -

5 = Ask Mannat how long take to systemize Heirlooms & film & start them off -

6 = See Heiler about weight of iron for Grenade & diet - the paper Bay way Stiffe

7 = Plans for 54" Hirzel Still
4 of them - & 40 ft 12" lowers
4 of them 2 or 3 turns of steam pipe each section

8 = Speak to Mason about Carbide solution at Wash at Cambria –

9 = about ordering 2 more Hoyt at Cambria —

10 = Get Kavens answer when he will ship –

11 = How is at Charles Chart get hard any parts & get statement made so will assemble then speak the Cylinder Wash room –

12 - See about fixing up long Concrete bldg next boiler room + wash –

13. Moyers plan to extend point of #11 Heat off down

14 Simpson Design iron rack hold paint cans in screw dept after Wright Model works

15 Simpson design water jacket Nitrating pot, hold 2 galls 3/4 pint like Cut in Guttmann's book make 2 of 3 of them —

16 = See what kind apparatus Christensen wants to Acetylate Ricline Oil

17 = Scott — design truck to carry motors to Cabinet assembling — also iron racks to hold motors in assembling room to test in racks –

18 - Design Travelling belt assembling all 4 machines with Tables —

19 Layout of shafting & machines by Heller or Scott with trucks, benches, racks etc to hold material unfinished & finished etc.

20 Scott, study screw machine Oil or chip box, filters etc presently (later) trip to Hartford — a

Werner Cup from a Cellulod print on to a wax & put it thru elec cup as a Cellulod —

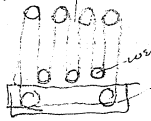
Riley & Cleveland Chief Koch Cleveland did not give numbers present when reports. How about this now. Can Chief give the Correct numbers

172 — Cy & Dise
329 — Big Calculators & Chasers
501 Screw Machine parts
415 Kinetos
916

Send for Acme Catalogue Show Illustrations & data as to specs of 172 & 329 productive parts 104

Only way get rid chaps is to
get a wage unoffended water.
Record + Wash face with
water tryst,

Use present Cloth



Saturate the clothes with
water. - trim + pickings
Recording depts

12 Samples Celluloid
Discs - defects for
Celluloids

Do [illegible] cases
We know very [illegible] room
we could D[illegible]
Disc + invite [illegible]

Never make record from
E Disc + Vic disc are
[illegible] to
show difference

[illegible]
[illegible]

See Riley about J/ft Show
+ Morgan — + paper about mon

(Billy - Portrait -)

See about Canada
acid mixer

J V M - Have proceeding
with Count —

See about getting more
Jigs for Top plate Disc or
Cylinder —

Try rubbing celluloid
over with pure Lanolin
+ then removing all possible
+ graphite

This might give oil to both
abs bad might try

Press celluloid with a highly
polished plate. Then gradually
it + cover it so 1/4 thousand
thick. Then print + plate
see what it does.

Moore = How about that
Buffed record, report
progress daily in Cylinder 2nd M

Try Acetone + Chloroform dope
instead Alling Ub

See how film plant
drawings getting on

(75)

What ~~Gas~~ was of Edgar
Machine ~~to~~ on Mandrill

Fred Oth - buff old
Copper wheel moment

See if 1/4% of the alcohol
of amyl al will stop break
of surface of varnish or
gelatin.

What ever ~~can~~ from the
Brooms mgm: no report

Can we ~~copyright~~
Drummond deca —

See ground ~~plan~~ Below
Lake for Phenol plant

Higham ~~Salary~~

Where is worker Etna
Reports. —

Dunoddic ~~Ventilation~~
new film Vault +
Expense double doors

Wm the Girl Elec of Japan
wires practical heat
Elec —

Give Gall the book about
Pressure photography

Diphenylamine -55
Salicylic acid
Acetanilid 50
Benzoic acid 114 115
Aniline Oil 65 - Sulf 65 & 66
Nitro Benzol - 95c
Resorcin 1.25 lb.
Write Lucas about
grounding aluminal
Explosion -

Belt for powder dishes -

Dimmwoddie drays
Cooling Coils
for Cylinders

Dimmwoddie -
Wash pure dess wax
dry & grafile -

By adding $ZnCl_2$ acetanilid
time as absorbed 3 hours
Heat 75 grams pure Aniline
with 3 - to 4 grams $ZnCl_2$
& 75 glacial acetic, in a
flask with inclined
reflex tube, for 3 hours
Pour product into Water
wash the Crystal Anilide
with Cold Water
Recrystallize from Boiling
Water
It is economy to use pure
aniline to avoid removing Color
also

Pittman on recording
Punch-Drill etc requirements
former.-

Write Vern for prices on
Shelving & boxes, & others
on boxes, also what we can
do ourselves on boxes —

Extra line of shaftling Each
Dept put up so as not
disturb S Bat plant but
move in sections -

Design General Truck for
moving parts also one for
Stock —

Also Hoists for Screw
Stock, also other stock

Big Stock Stk Room
Small Stock Stk Room
Steel Shelving —

Wheel way from grinding
Dept to #11 Elevator.

Truck way from big & little
Stock -

Arrange to use the 2n
bottom Short L s -

Scott Lamont outside
wiring - poles, position
Ludlow, etc —

Drainage works ground

Dipping room, Air Cooling
Tanks

Cooling Plating baths
Small Machining — look them up
Elec Gas work

How about Vac cleaner for Refreshment room —

To get a hiring man probably Burns or Chief M/ police or Riley might help get a man —

Find out if Geo Eastman will give me some credit

Do we get credit from Celluloid Co —

How about Gold Cracket SB get it, also Lumber

How about Cabinets — Credit, —

Manager Hiring man.
General Manager — Leeming
Dept Maintenance — Nicolai
Secy & Treasurer
Credit — Phillips
Traffic — Rogers
Foreign — Stevens
Head Accountement — Nickerson
Manager Sales, — Maxwell
" Demonstrators — Riley
Advertising Man — McCheoney
Efficiency Engineer — Mamberet
Purchasing Agt — Cheshire
Legal Dept — Hotchkiss Lanahan
Auditor — Eckert
Vice Presdt — Wilson
2nd Vice — Charles Edison
Business Phone — Durand
Bates — Burnham
Film Dept — McCheoney
Tool. " — ~~Weber~~
Production Engr — Weigel
Primary Bat — Hudson

Manager of Yards
" " Disc Rec — Hird
" Cylinder Rec — Mehr
" Hyp records — Baldwin
" Screw Mach
" Drill-Mill
" Lathe-Grinding
" Reproducers — Simpson
" Polish Japan Horn, Plating, —
" Punch rough grind blacksmith
" Sub-Mac Assemble
" Assemble Cabinet Ship
" Electric power, boiler, water, Mic
" Duplicator Mach Etc Werner & Hayes
Engineering
Designing Engr Constable
Manager Lab — Luhr
Chief Draughtsman — Carum
Genl Engr — Mason
Jig & Tool Designer — Olsen
Experimenters -
Messrs Dunwiddie Christensen
Goff, Dally, Fredoff, Werner

Mic Boss Carpenter — Driscoll -
Mic " Pipe fitter — Burns -
Mic Chief Engineer
Boss Pattern Maker — Mudd.
Photographer — Ludder
Chief Tester, all products — Halpin
Paymaster,

(25)

Special racks to hold
Disc Cy - Big & Kinds
To wind up & test. Ufors
Testing for noise in Cabinets

Also part trucks - stock
trucks -

Racks for holding Motors
along Cabinet Assembling

Probable requirements for all
depts. 800 ft of two story
racks, 16@20 high of boxes
+ 14000 boxes.
Write for prices also how cheap
we can get heavy tin or
iron japanned or Nickeled -

Tell Caum about allowance
for heavier Columns - S

Go down with Chrysler
See Hudson & Miller about
occupying part bldg
for Mfg Chrysler -
Drum at a time -

Riley some kind of letter of
introduction of an inquiry so
worded that it will induce
the recipient to hand to
Dealer - Important -

Not Enough Total receipts

How about answering
question about flat House
reception noise receipts -

Nicolai – There is to be no piping or Electric wiring in Big Bldg Except emergency I will have everything laid out – Also no erection or running of wires on grounds or from building to building I am planning a system

Get Orthchase Telapan be fused with Canalis Sod or Cart Nat Lime (if feasible) & K hunde Sat –

Mambert arrangement near Office 2 floors only

Read amperes required in Disc Cy – Lab Office + ~~beyond~~ Split E & W at RR next to office & put in Eshamgen to save wiring + get Long Tung

~~On hand~~ Get prices for the new Motor Generator & on this basis, Put Scott on Outside pole wiring for whole plant.

Get Cost of Rec'd Bldg – plain – $5,850

Some draftsman to Calculate the space & water supply for Disc Cy. Big Balance Kinetic so Can get sizes boxes for all depts –

Box for tools beside the Tools. or if room put in Stock room – probably best a locker along tools holding Tools for 20 ft or more of the row of Tools – locked & key at office –

Must have a stirrer in fusion pots phenol plant
Drip forming Cyphenol
bottom burns

after get out sidewalls of phenol in walling out by Benzol agitation

Kings new system of
also sulfating with SO3 added
after hunt is worked

Speak to King about large freezing preparation of st. bella than adding Oleum

Put big fan on
Estero
Little fan on Estero also

Cost of Cy+Dso Clock House

Lumber	1.138
Corrugtd Iron	558
Labor	2694
Cement	956
Sundry Hardwarestc	589
	$5.938

5 ft pipe shoring
Pipe + filling. Put outside
Coats 11.69
Lab cut Lab put logilla 5 od
$16.69

Lecture on the Recording & Reproduction of Music by Phonographs with Moving Pictures & Stereopticon illustration and a programme of the finest Music both vocal & instrumental, from The New Edison Diamond Disc Phonograph by Prof. W E Smith. Admission 25 cents.

~~Walter Miller get from Valet all names of all the songs he sings. Always get me near Mean~~

Is Fox with Warnat on our payroll yet.

8½ Million Gal Benzol now produced in Bye product ovens in US in 1913

7½ from coke 1 Million from tar.

Possible prodn 25 Million Gals

W Mason in Met + Chem Engg 1915 – 13 – p 17 + 18

Gives details of H_2SO_4 Silica Carbonate plant

Conc from 65% to 95.25% H_2SO_4 4 tons daily Cost plant $1400. Cost Concentrating per ton $1.59 per ton

P Radman, Gothegard,
Sweden, Producing
Soluble Potash Salts
Eng Pat 17,136. May
16 1914

1 pt by weight of Gypsum
1 " " Felspar
to which up to 3 parts
of limestone may be
added, intermixed 80%
thru 200 mesh + heated
to 1000° to 1250° Centigrade
+ then leached or used
on soil — Bell Keeper

Several Explosions Picric A
etc due to dry dust
Burst of all Explosives liable
Explode should grind wet

Aniline Oil + mix of
Benzol Toluol + pseudo Toluol
Look out in Contracting
Only pure aniline
Mono-phenylamine —

Ask McAllay What he
pays Moses —
also Why not let Myers
go or reduce salary

Jeff Cann want drill
sharpener in Drill + Mill + better
Mill sharpener —

Jack Sharpener in Screen

Note if we cant use old machines for spare parts & take them in trade —

King = In some we use Sulphuring acid to Neutralize well there be enough left of for complete Neutralization

The Export we had some time ago we got this —

5 Lake water / 110 Litres

Bengal 17 Litres 93% H_2SO_4

Thus in 1 part Sulphuric to 1.85 pts free H_2SO_4

We need 200 cc 93% H_2SO_4 or 355 grms + 500 Bengal found 215 grms free H_2SO_4 — the form of 83 Baume 5 hours sulfonating at Boiling P of Bengal

Thus we 1 pt Sulfuric to 1.6 of free Sulphuric (100%)

King = QVM detitles his Sulphuring only 15% to dissolve Nickel — also used it to dissolve Iron for hydrogen —

What will it cost for Materials for Glycerine & also Aniline —

If 4c for 40 added .8 H_2SO_4 + 30 Sulfuric for Bengal

1st test Crude Bengal Cambric —

80c	1.5 %
80 to 100	40.2
100 to 120	27.2
120 to 145	15.2
145 to 180	7
Residue	9
	100

300 gal Dirty crude

Leaming

Dimmdrio says man could see in G. Gould have gone in with fears are locked up by the door

Lease 2 Cars for Thing at 30. Erecte [illegible] -

150-month
4 men 20¢
1 27¢ hour

Contractor

Milsap - 2nd Cement bags -
8 197

Acetphenetidin (phenacetin) 3.40 To 3.50 lb -

Myrbane 33 Cents

Salol 1.10 @ 1.15 lb

Resorcin 125 lb

Salicylic a 145 @ 150

Jell McGuivent to Veazy, 11 W C
When he has a special lot of work to do now & then like folding that, he should keep people permanently to meet these occasions as every morning there are lots of bright young fellows who want a job no matter how abstract

Get addresses of Chem Brokers in NY -

Diphenylamine

Heat 1½ Mols Aniline with one Mol of Aniline Hydrochloride to 210°–214 for 30 to 35 hours in a long necked flask provided with a Condensing tube. Or more quickly by heating the same mixture in a closed vessel under a pressure of 4 or 5 atmospheres.

On treating product which is a mix of Diphenylamine Hydrochl & Aniline Hydrochl & Colouring Matters with hot hydrochloric acid diluted to 20 or 30 times its bulk with water the Diphenylamine hydrochl is decomposed by water & the base separated rises to the surface as an oil

which solidifies on cooling

It is purified by repeated Crystallizations from Benzol or Ether in which the Coloring Matter is insoluble, & ~~by~~ finally by distillation

It forms a white sublimate

Boiling 310 Cent

Dehaire Girard, a Chapteaul

* Bull Soc Chim [2] VII 360

Diphenylamine by heating Aniline to 225° with dry phenylsulphonate of soda

Dehaire say no diphenylamine is formed with phenol sulfonate Na except a small quantity of an aniline salt is present in which case it is formed by the action of the aniline salt on the aniline itself -

Another Process

Heating a mix of 1 part of Aniline Hydrochloride 2 parts Phenol 1 part furnishing HCl to 250° — Zinc acid speed the reaction takes place at 300° showing acid not as Etherifying agent

Another by passing Aniline

* & Bromobenzene through a tube heated to low redness or by action of Sodium on the same mixture at ordinary temperature

" Another Heating Aniline with phenyl iodide to 180°

* says formation of Diphenylamine on Bromobenzene & Iodobenzene occurs only when acid is present or when aniline contains an aniline salt,

Grand & Lary conclude that Diphenylamine not produced by substitution of a phenolic residue for an atom of Hydrogen in Aniline
Merz & Weith, despite this
Deut Chem Ges Ber V 233

Consul D.P is pure with the exception of traces of Aniline & Crystal from Ligroin in large plates
MP 54°

Merz & P Muller Ber 19 2901
long paper describes various method used & conditions required for conversion of phenol into Aniline & Diphenylamine, & fully discussed
When phenol & Ammonium Zinc Chloride or simply Ammonium Chloride are heated to 300°

70 to 80% of the phenol is converted to the Amine
The yield of which is independent on an excess of Ammonium Salt the temperature & the time of heating. Same change can also be effected with Zinc Oxide or Magnesia & Ammonium Chl
The percentage of an excess of the latter prevents the formation of Diphenylamine
Experiments in Alcoholics were not satisfactory

Diphenylacetamide formed together with Cyanic acid (Carbimide) by dry distillation of unsymmetrical Diphenylcarbamide —
& in a like manner by distillation of Triphenylcarbide

Merz & Weith Ber 13 1298-1302
Diphenylamine is formed by heating Aniline Zinc Chloride with Phenol at 250

$$NH_2Ph + PhOH = NHPh_2 + H_2O$$

Blucher's Industrial Chem (Modern) says –
Diphenylamine obtained by heating Anilines with Aniline Salts (Aniline hydrochloride) to 210–240° in Autoclaves product treated with HCl & then with excess of caustic so that the Diphenylamine Hydrochloride formed is decomposed by the caustic & the free base floats on the surface & when it rapidly solidifies
Its purified by washing & fractional distillation
Colourless MP 54 – BP 310° C

Crude product should be nearly colourless not greyish have no disagreeable smell Melt at proper temp & should not rapidly turn brown in the air It is tested for Aniline by shaking the powdered substance with a solution of bleaching powder when it should not turn Violet –

Aniline –
Free HCl now used and neutralised by lime & Aniline distilled off by high pressure steam & to purify redistil in Vacuo

Anilin - Nitrobenzene reduced
Electrically - reduced by metallic
salts which are at same time
deposited on the Cathode
by using Copper salts
Yields of 80-90% aniline are
obtained !! clean - reversible
German patents

Bluche

Anilin Hydrochloride made
by saturating aniline at 100°
with HCl (free of CO_2) after standing
a few days the salt separates
out, It is then pressed
from Mother liquor in a Centrifuge
& dried at 150°.

Bluche

Benzoic & Phthalic acid
~~from~~ Naphthalene Sulfonic
acid fused with KOH &
such oxidizing agents as
Fe_2O_3 CuO MnO_2 etc
The phthalic is separated from
the Benzoic by distillation &
many German patents

Bluche

Salicylic acid German
Pat 133500, The (Ger) Reg
fused Benz Sulfonic acids
& powdered Na is converted
into Salicylate Na by passing
Current of CO_2 Water powder
from which it is pressed in
usual way
The purest Sali Can only be
made from synthetic
phenol.

Get price Amer Can Co
1 3 5 & 10 lb Cans
Carbolic sgr cans

Get all the Catalogues X
get for small Ammonia
Machines
Get Catalogue for Centrifugals

Look at gas House see
if suitable for Aniline -
See Glen Ridge if suitable -

Cement Co bought new Chem
labs apparatus -

Merz says Textile trade uses
Aniline oil first of Toluidine

Dyes that sell well & big
demand given me by
A L Murphy salesman
National Aniline & Chem Co
100 Wm St NY

Price
Galwan

18c lb Direct Black 50 c
only 1/2 is real dye

17c Benzopurpine 60 c

35 { Sky Blue 6B
Alam Sky Blue FF
Chicago Blue } 90 c

25 - Chrysophenine GE 65@70
25 Congo Red 60

Acid Black
Metalino Yellow -

Get list Wholesale Drug & Chemical Houses dealing with Local Druggist —

Get the Book published by Druggist Association giving list Chemical Houses I sent a get at month ago — Get Directory of Druggist ~~[illegible]~~.

Find out from Constable which of the designs worked but keep both or all till works patent all —

Do we inspect worms on turntable + goes for hardness + how —

Moore try 4 1/4 to 1 in blank
dittos 4 1/2 to 1
dittos 4 to 1 4 1/2 free pulp

Try Muggles get 1/2 dozen + find out ~~[illegible]~~ sponges + try if men at coughing will take —

Complete details of info of Salicylic Acetylsalicylic + Salol is given in Chemical + Druggist Vol 85 313-p 1914 — England & Think

Late Danish pat C/Lund-Lawersing prevents static charges in Bags of Containers or Cartridge or a chamber in disposed in the Mouth of the supply pipe + provided with a wire gauze connected by a wire to the Earth

Get Cost our ice plant,
also get from King data
so can determine Wiggs —
After that send for Chalaqueo

Ask Murray to find out
if they heat their retorts
with gas from the retorts
or with Coal —

Leigh Martin at Fairfield
gas tested in bid
Liquid from Pittsburgh
acts same way

6 | 3300
550 gal —

50%
3300

Phenol Sales

US Govt	Daily	640 lbs	56c
F Lozier		100	100-10
Monsanto		100	55
Heyden		100	85-35
Baker	182 Gals Cancelled —	150	55
	our wants	2200	average 58c
		329	

Estimated Benzol

Cambria	1000 gal	29
Sydney	800	24
Woodward may get	600	55
	2400	

25000 from UGI.
Possibly 400 to 600 at
50 Cents from Sidney Extra

Morrumac Chem Co get
700 from N Eng Coke & Gas Co —

UGI lasts 7 weeks.

Possibly 400 @ 600 Sydney
50 Cents

Look over gas house [illegible]
for ammonia — Dilla [illegible]

Place order for Aniline &
Methylene [illegible] right off

Carbolic — We use 110 Litres Benzol
+ 170 litres 98% acid — 2.96 to 1
Requires 8 hours to Sulfonate
Can make 3 sulfonations in 24
hours
To fuse 7 to 8 hours Can make 3
fusions in 24 hours.
Fuse 900 lbs NaSulfon with 720 lbs
Caustic produces 420 lbs Phenol
1.71 Caustic 1 phenol
Neutralizing & separating phenol in
tank takes 18 hours, product
about 400 lbs.

Distill 550 lbs in 12 hours pure.
change to 650 lbs crude phenol

takes 2 hours for lime to settle
after treatment with Na_2CO_3

Sulfonating Mix 73.5% Sulfuric 26.5 Benz

Watson — [illegible] left Lisgum
to all [illegible] about
supplying [illegible] &
a letter to all dealers
about prompt shipments
& [illegible]

See Hoffman [illegible]
[illegible]

One big add in [illegible]
Benz Mac

Friday 9st 4 men [illegible]
[illegible] to Recite [illegible]
[illegible] gas R [illegible]

125 Disc-Racks —
in Saw tooth

Chemist for Gravely

J V M [illegible] 1742
gal hour
Temp 57.2 Tahr

Total Solids	44.8 in 100000.
Loss ignition	17.92
Silica	2.42
Fe2O3	[illegible]
CaO	8.40
MgO	3
SO3	9.16

Cl 2.13

Requested Records
30 days

	Class B	Class C
Inspected	240	489
Crkd Var	1	8
Scratched	0	19
Pin Hole	0	3
Varnish Spots	0	7
Poor Print	0	1
Rejected	1	Rejected 38
OK	239	OK 451

March 18 Benzol

On hand	8000 gal
Rec from Pipeline	3241
" " UGI	24100
	35341
UGI may not get	8800
	26541

Organic Carbolic
all in one

Hulch Ask Harvey what
the yield of Picric should
be from pound of Carbolic
& mean actual yield ' 1.50 lb
per lb phenol

Ask Wilson Freeman
Hull Combs Carbon sell
Vic as they get off 40
& we only 30

Lehigh Refining Co
Mount Sylvania Tank
Cars

Ask Badgin for blue print
of Still —

Picric yield 150 P per lb Carbolic
100 lbs phenol
450 lbs 70% nitric
gives 150 lbs Picric
300 lbs 98% acid

15.5 cents lb of Picric for
Nitrating — 76.6 for Carbolic
Dead Cost no Labor
66.6 Cents lbs —

(12)

Rough Estimate phenol plant 1st one

3 Sulfonating Pots in place	3600
6 Storage Tanks	600
Foundations for 6 tanks	500
2 Salting Tanks	1800
Ice Mac-tanks-Motor	4100
Ice Cans 250 10" 36"x36" Cap	2500
3 Centrifugals + Motors	1700
Acid Tank + Pump	500
Magnesia Tank	1000
3 " Settling Tanks	700
Acid Tank + Pump	500
Truck + [illegible]	100
Fuming #350. each	1050
Brickwork	2500
Cover, platform, Misc	800
Stirrers	2000
3 Dissolving Tanks	900
3 Filter presses + pumps	2100
3 Neutralizing Tanks	3000
2 Phenol Stills	7200
2 pumps	500
- Benzol fumes + Pumps -	2500
Buildings -	10000
Loco 6 boilers + House	2500
6 Motors	1500
3 - Crystalizing Tanks -	750
Piping	3500
	49455

46500 [illegible]

McCheany Work 4 days
work will cut expenses

Wilson = You must see
Plimpton & have him
get back to 140 Cost

Literary Digest, Council for
answer it —

Meadowcroft Telegh Nzith
$304 Cash —

The 53 ft building
Costs $25 per foot
not including floor
as that was in

Frame + Sashes $218.50
Hardware 160 25
Lumber 548 97
Galv Iron + Cornice 782 86
Labor 844 79
Incidental 735 65
$3.291.02

131 ft long

Ring Hoy since we
take care of unsolicited
Pergola

(105)

March 24. Leeming says
there is exact Phenol on hand 16980 lbs

Benzol on hand 4464 Gal
Due from Dupont 2400 "
Due from UCI 15600
22464

Kammerhof using during
last 2 weeks 1050 gals
daily

In 8 days 8400 gals
weighing 60480 lbs

Obtained 26402 lbs Phenol
1.85 total for 16 days
2.29 lbs Benzol per lb Phenol
instead of 1.45 as reported,

from Mch 16 to 23 Delivered
to Mfg Dept 28019 lbs.
should make 23816 lbs Resin

Should make 2977 lbs
Resin daily —

1

Kammerhoff acid daily
Benzol used & Phenol
Produced — Hoffman
Resin in stock & daily
produced & distilled
Carbolic returned
Stock of returned Carbolic
Resin & K has on hand.

K Has on hand 16988 lbs
23rd Mch — & several thousands
in B Na salt — also recovered
10000 lbs —

1 gal drip oil for
Every 84000 cubic ft
gas —

Harry Miller [illegible] Carbon plant, also Cost of details

Dry Carbon deposit Platinum on Acheson graphite.

Moore — Have about those electrolytes discs —

Direct Cotton black not full strength but down with NaCl to and calcinate it — 50c to 60c lb —

Ammonia in liquor work absorbed by gypsum

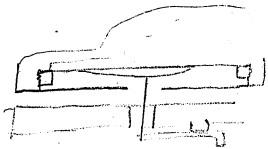
Neutralized superphosphate do

Na K phosphates OK

Aniline black. Discovered by Tur & Lab. gives
pararosaniline - Diphenylamine
& Para diaminodiphenylamine

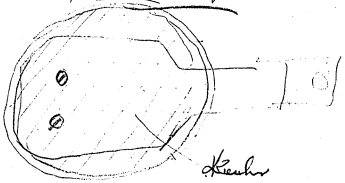
See of Hayes Stell
tests the Repeaters

Lutes - both small & large
Discovered Repeater put
baffle in



Baffle

Moore - what backsma of
Expert 4 1/2 To 1 Mark -



Try this -

Ask Murray if Paradys Co
Closed for Christmas -

Raumhoff Na Sulfite
Crystalline 90 cents

Dominion Steel Castings

Address C A Richards
Care Borring & Co
17 Battery Place NY

"Borring"

Lubs form for Box co.
Screw Mach Dept etc.

Etc –

Set Myrham ~~[illegible]~~ 50 spring
water Iron & alum
Thunderwolf 1 [illegible] – 6 pots –

Get the Calabaquin on money
Regular Trucks with C.O.D.

Halpin Resume tests
testing Blue
Ambrosio –

Santa Fe Walsh Co
Topeka Kansas

Mullaly —

6 months duplex 70 —
Dr. 9 " " 65 —
at 1 year 58

Ton Ice plant will Cool
20 lbs water 10 deg
in one minute.

Ostrander Works
Kreaby N.J.
Tiles for digester
lining used in
paper mills —

Logan
63 Cents for
Nitrating 30 acre plant

Nelms Co 62½ cents
for nitrating —

Scott about Lab
windows —
Breathing dust inside
Benching at Brg
works —

Luhr Brothers

Hudson do own putting
on steel sheet —

CTS-1

Lozenge man says
1 lb picric bought
3.3 lbs 42° nitric

Guardanis Valzer
Cantabile – by Boni
Black or very disagreeable!

Henry Snyder MD
223 Roebling St
Brooklyn
Writes complaining letter
Said been acid at every
Expense by Express & &
would investigate –

Halpin Pat man Inspecting
Dyc & Cy in Record shipping
Dept –

Bachman Henry Lamp
neglected – Chg Rack
pieces Ele

April 16 –
11000 lbs Resin –
3452
14452
1050 – got 850 – Recovered 60 lbs
or 1000 lbs phenol 850 Resin –

Masons Washing of 90 %

800 gal - puts in 1/3 of the H_2SO_4 runs 10 min - another 1/3 runs for 1/2 hour then final 1/3 & runs for 15 20 min —

Let it settle for 1/2 hour

drains off lar & acid & slops

draining soon as Recycl appears

Then without using any water to wash on account of making a bad emulsion.

Now takes a 10% solu of NaOH, & puts in an amount equal to 10% of the Recycl.

Run 1/2 hour, settle one hour

Drain off soda — Then wash with water.

it makes some emulsion

settle 1/2 hours - then run into tank - its ready to distill to pure —

[158]

His tank on his 90% still holds 3000 gals it will take ~~two~~ 2 days to fill it —

~~Stolen to Late~~

~~Distributors~~

~~Wanted at new Workers~~ —

We use 320 gal Vac daily for 18000 gal ~~a day~~ daily.

~~Mason you should test~~ your wash oil for Dehydrant Mat also temperature

Riley - Send some key men to
Prov Worcester Hartford -
& Smaller New England Cities
Working from Boston -

Send Cambria 50 cod
on account -

See on board of Gover
Report To Lakes -

Mason superheater for
heating water feed
Rapidly Corrode & spare
heater should be on hand
to Switch in and
without disturbing system

Forgot about water differential
Cooling like a still but
want water to run from bottom
to top the vapor into still -

140
150
7000
140
210

1.3 1.66

70-
110-

13 | 7.5
26 | 45
260
1820

1.73

6 | 3300
550

4.54

550 | 2500
2200
3500
3500

Liebold

C1540

36 mm 1 1400

18 2

9 4 1400

4.5 8 1 32 Cents

2.25 16

4.1/2 mm 8 feet

133
200

4.5 | 600 | 133
45
150
135
150

16 gallons

8.1 Mbg

13 | 130 | 10

1

16 | 130 | 8.1
128
2

13 Cents 1 lb bat

| 1.3

10

3